

RENAUD BROS., INC.

283 Fort Bridgeman Road #2, Vernon, VT 05354

phone (802) 257-7383

fax (802) 257-7308

Marlboro BRF 010-1 (43) Pile Installation Narrative

Earth Excavation

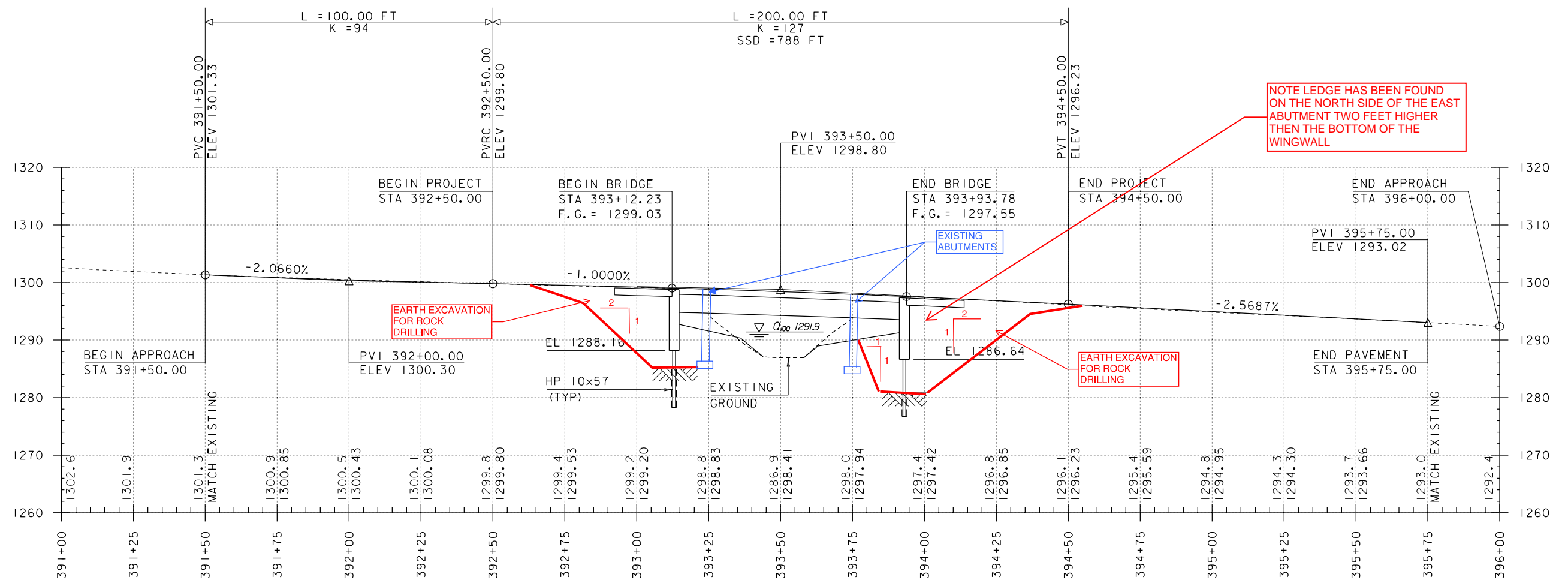
We plan to excavate the earth completely to bedrock where the drilling will begin. We need to provide a 2 to 1 slope for the drill rig to access the pile locations. On the opposite bank toward the river we will excavate to the existing abutments at a 1 to 1 slope. Once the excavation is complete the drill rig will be brought in to drill the cores.

Rock Excavation

The drill rig will drill the rock sockets with the use of air. The use of a vacuum truck maybe necessary to remove the broken rock fragments from the socket excavation.

Setting Piles and Grouting

The piles will be set and supported to allow for the grout to be placed and cure. Once the grout has cured the excavations will be backfill to the bottom of pile cap elevation with structural fill.



MAINLINE PROFILE

HORIZONTAL SCALE: 1" = 20'-0"
 VERTICAL SCALE: 1" = 10'-0"

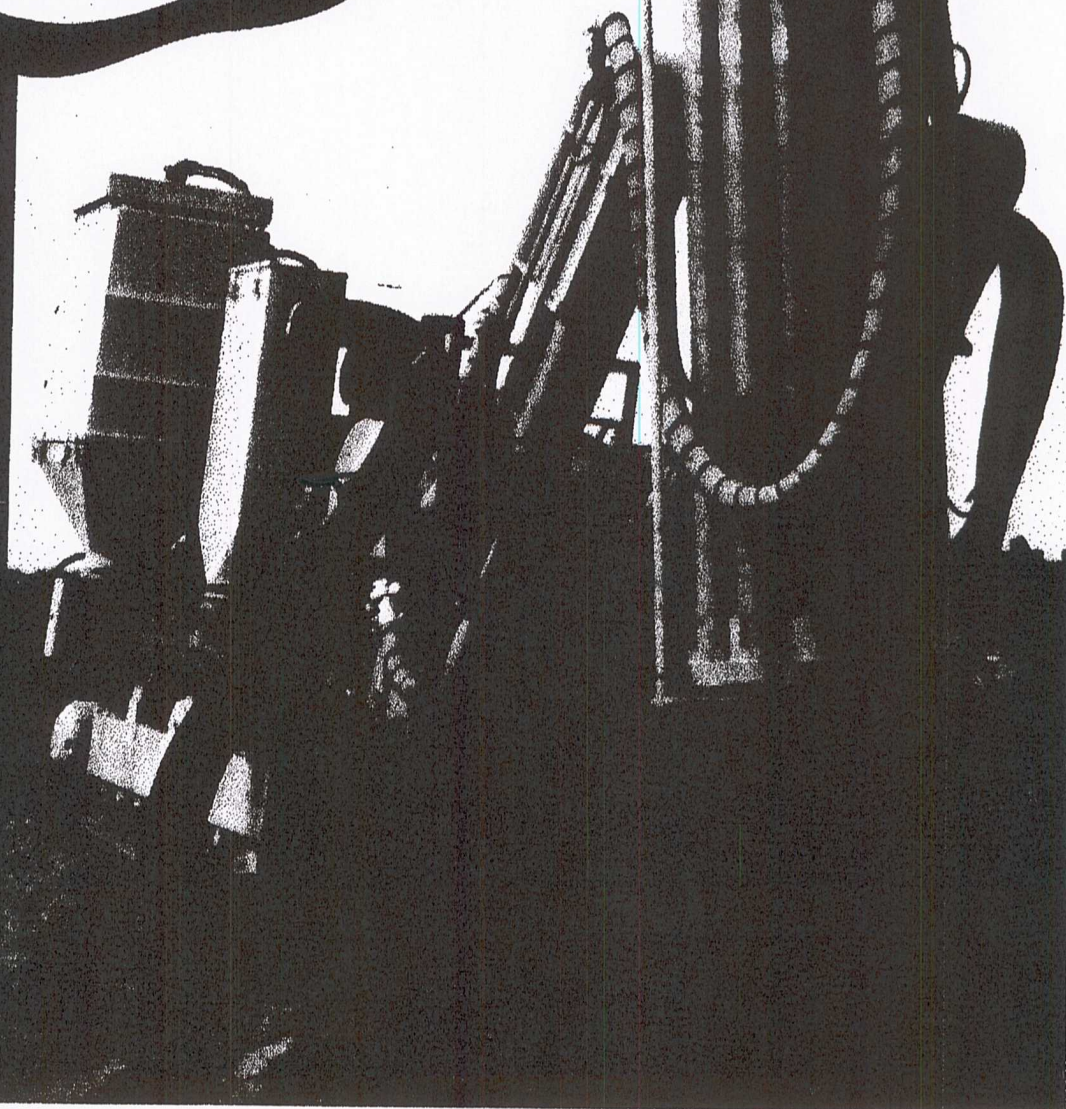
PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1 (43)



**GILL ROCK
DRILL COMPANY INC.**

THE GILL BEETLE

**A Versatile, Low Cost,
All Terrain
Down the Hole
Drilling Machine
For 4" to 24"
Drill Applications**



Mailing and Shipping Address:

GILL ROCK DRILL CO., INC.

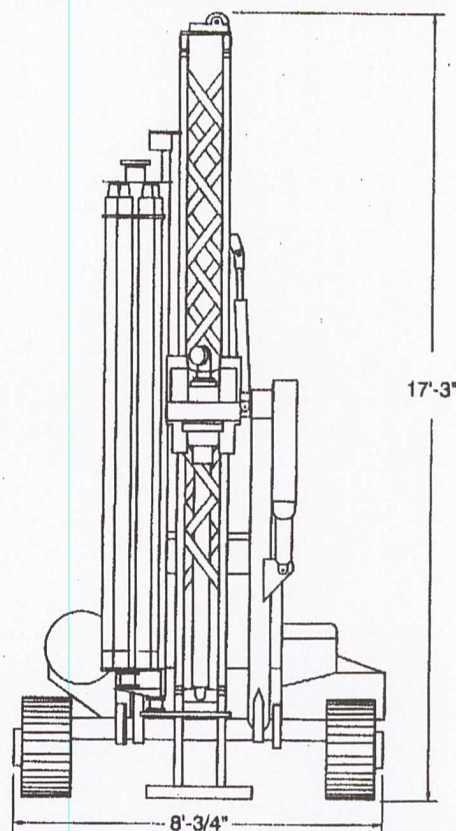
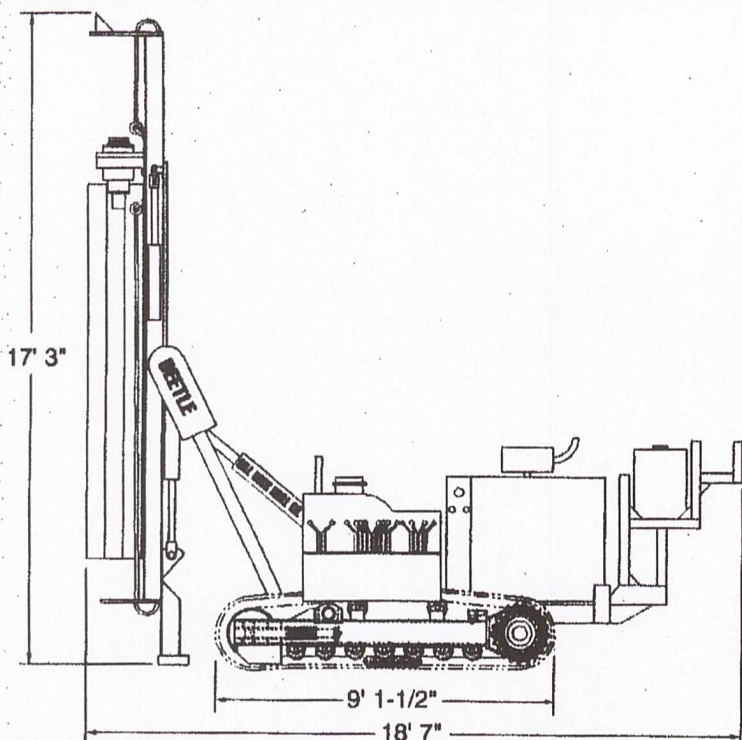
903-905 Cornwall Road

Lebanon, PA 17042

Telephone: 717-272-3861

800-334-3117

Fax: 717-272-4140



SPECIFICATIONS

OVERALL DIMENSIONS

Maximum Length (Mast Horizontal)	25'-0"
Length (Mast Vertical)	18'-7"
Maximum Width	8'-3/4"
Maximum Height (Mast Vertical)	17'-3"
Height (Mast Horizontal)	8'-9"

MOUNTING

Length of Crawler Overall	9'-1-1/2"
Width of Machine	8'-3/4"
Width of Pad	1'-0"

MAST

Height Above Ground	17'-3"
Mast is positioned over hole by hydraulic cylinders	
At required angle - no leveling jacks are used	

WEIGHT

Working Weight With Hammer (approximate)9 Ton
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PULLDOWN

Pulldown Force, Maximum	31,400#
Pulldown Speed, Maximum (without rapid feed)24'/minute
Pulldown Speed, Maximum (with rapid feed)70'/minute

HOIST

Hoist Force, Maximum	25,400#
Hoist Speed, Maximum (without rapid feed)30'/minute
Hoist Speed, Maximum (with rapid feed)82'/minute

ROTARY DRIVE

Rotary Speed	up to 60 RPM
Rotation Torque	up to 6000 Ft. Lbs.
*Dependent on motor option	

PROPEL SPEED

Maximum Propel Speed	1.5 MPH
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POWER UNIT

Cummins 4BT3.995 BHP at 2200 RPM
Detroit 3-53n75 BHP at 2200 RPM

DUST CONTROL

Water Pump, Bean9 Gallons/Minute
Optional, Dust Collector	

HAMMER LUBRICATION

Manzel Model 76

HYDRAULIC SYSTEM

Hydraulic cylinders for boom, cross shaft swing, mast swing, crowd, power wrench and carousel. Hydraulic motors for rotary drive, propel, water pump and lubricator. Hydraulic source 1-70 GPM tandem piggyback pump, 2500-3000 maximum PSI.

DRILL PIPE

2-3/8" I.F. Rotary Joint	4" OD x 10'
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BOTH LARGER AND SMALLER DIAMETERS AVAILABLE

Also available in 12' lengths.



Nothing contained in this brochure is intended to extend any warranty or representation, express or implied, regarding the products described herein. Any such warranties or other terms and conditions of sale of products shall be in accordance with Gill Rock Drill Company's standard terms and conditions of sale for such products, which are available upon request. Illustrations in this brochure may show equipment with optional extras. Specifications and equipment subject to change without prior notice. Consult Gill Rock Drill Company for specific information.

CERTIFIED MILL TEST REPORT

 Printed: 05 / 28 / 2013
 Produced: 05 / 14 / 2013

 (260) 625-8100 (260) 625-8950 FAX
**Quality Steel 100% EAF Melted
 and Manufactured in the USA**
 Recycled content: PC = 92.1%, PI = 5.7%
 ISO 9001:2008 and ABS Certified

Ship to:
JD FIELDS
 c/o Aliquippa Terminals
 100 Woodlawn Road
 Aliquippa PA, 15001 US
 Attn: Janet Davis

Customer # 000076

Bill to:
JD FIELDS
 P.O. Box 134401
 Houston TX, 77219 US
 Attn: Alice Perez

GENERAL INFORMATION

Product H-Piling
Size HP10X57
 HP 250 x 85
Heat Number A085539
Condition(s) As-Rolled
 Fine Grained
 Fully Killed
 No Weld Repair

SPECIFICATIONS

Standards	Grades
ASTM A6/A6M - 12	
» ASTM A572/A572M - 12	A572 gr50/gr345
ASTM A709/A709M - 11	A709 gr50/gr345
AASHTO M270M/M270 - 11	M270 gr345/gr50
ASTM A36/A36M - 08	A36 / A36M
ASTM A992/A992M - 11	A992 / A992M

SHIPMENT DETAILS

BOL # 0000285243 - 41040.00 lbs

Bundle / ASN #	Length	pcs	Cust PO	Recv PO	Job
021817991	60' 0"	4	STK-55804		
021817995	60' 0"	4	STK-55804		
021817980	60' 0"	4	STK-55804		

CHEMICAL ANALYSIS (weight percent)

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	Nb/Cb	Al	N	B	*C1	*C2	*C3	*PC	*I	Analysis Type
.074	1.22	.017	.019	.19	.27	.09	.12	.021	.011	.032	<.001	.002	.0134	.0003	.34	.37	.32	.17	5.43	Heat

MECHANICAL TESTING

Test	Yield (fy) Strength ksi / MPa	Tensile (fu) Strength ksi / MPa	fy / fu ratio	% Elong. {8" gage}	Charpy Impact Tests (available only when specified at time of order)				
					Temp F / C	Absorbed Energy ft-lbf / J			
					Specimen 1	Specimen 2	Specimen 3	Average	Minimum
1	54 / 376	72 / 496	.75	28					
2	59 / 405	73 / 504	.80	25					
3									
4									

Notes:

*Calculated Chemistry Values: Carbon Equivalents (C1, C2, C3, PC), Corrosion Index (I)
 CE1 {IIW}=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15 CE2 {AWS}=C+(Mn+Si)/6+(Cr+Mo+V)/5+(Ni+Cu)/15 CE3 {CET}= C + (Mn/6) + (Si/24) + (Cr/5) + (Ni/40) + (Mo/4) + (V/14) Pcm{AWS}= C+Si/30+Mn/20+Cu/20+Ni/60+Cr/20+mo/15+V/10+5B
 I {ASTM G101}= 26.01(Cu)+3.88(Ni)+1.20(Cr)+1.49(Si)+17.29(P)-7.29(Cu)(Ni)-9.10(Ni)(P)-33.39(Cu²)

I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.

Signed:

I hereby certify that the content of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated requirements.

Signed:

Yury Krotov

Manager of Product Quality and Process Improvement

Form F-6100-002-054 rev 6

ASTM A6 - 14.6: A signature is not required on the test report; however, the document shall clearly identify the organization submitting the report. Notwithstanding the absence of a signature, the organization submitting the report is responsible for the content of the report

ABS CERTIFICATION

State of Indiana, County of Whitley Sworn to and subscribed before me

this _____ day of _____

Signed: _____ My commission expires: _____

Notary Public